

Historical Sketch: XS-1 and Breaking the Sound Barrier

One of the most storied accomplishments in aviation history took place in secrecy on October 14, 1947, when U. S. Air Force Captain Chuck Yeager in the Bell Aircraft Corporation's Experimental Sonic-1 (XS-1) rocket plane dropped from the belly of its B-29 mothership and exceeded the speed of sound (Mach 1). Fighters operating in the transonic flight regime in wartime had already experienced instability, increased drag, and other negative effects as the efficacy of their flight controls degraded in high-speed dives.

The project to break the so-called sound barrier reached the Mojave Desert as the Air Force's XS-1 arrived along with personnel from Wright Field in Dayton, Ohio at Muroc Army Air Field on July 27, 1947. The Air Force's test team consisted of B-29 flight engineer Lt. Edward L. Swindell; XS-1 backup and chase pilot 1st Lt. Bob Hoover; officer-in-charge and B-29 launch pilot Maj. Robert L. "Bob" Cardenas; XS-1 pilot Captain Yeager; and XS-1 project engineer Capt. Jackie Ridley.

The XS-1 experimental airborne research verified the safety and controllability of flight in the transonic and supersonic flight regimes, the feasibility of air-launch operations, and helped establish what would become a recurring partnership, between the Air Force Test Center and NASA at Edwards AFB. Warfighters since the 1950s have reaped the benefits of the supersonic capabilities the XS-1 helped enable, as do Air Force pilots operating the F-16, F-22, and F-35.

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